

Article

Preventive steps implemented on geriatric services in the primary health care centers during COVID-19 pandemic

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Abstract

Background: The emergence of the COVID-19 pandemic has changed the delivery of medical care across the world. The objective of the study is to understand and document the preventive steps implemented on geriatric services in the primary health care centers during COVID-19 pandemic.

Design and methods: This is a retrospective study carried on geriatric services utilization (Geriatric Clinic, Osteoporosis Clinic, Memory and Dementia Clinic) in primary health care centers in Dubai Health Authority in 2020.

Results: The study showed that the overall in person visits for all geriatric service in 2020 declined by almost 70%. The total number of telephone consultations in geriatric clinics, osteoporosis clinics and memory clinics were 1479, 1149 and 104 respectively. The COVID-19 pandemic had led to a reduction in most of the geriatric services including outpatient clinics, screening and referral. Telephone consultation provided a foundation for delivery of the service.

Conclusions: This study reflected the potential for telehealth services to bring benefits and convenience to the geriatric population, even after the end of the pandemic.

Introduction

Coronavirus disease 2019 (COVID-19), originated at Wuhan, China and has become a public health emergency of international concern. This disease can range from asymptomatic infection to severe respiratory distress syndrome and death. Predominantly, characterized by fever, fatigue, and dry cough.¹

The geriatric population faces special risks for COVID-19. It has been reported that old age and underlying diseases are noted as the main factors for vulnerability to COVID-19. An age ≥ 60 years is a major risk factor.^{2,3} The aging immune system loses the ability to protect against infections and therefore older adults are at a significantly increased risk from COVID-19 complications. Furthermore, older patients had more likelihood of a severe disease requiring intensive care admission and had a higher case fatality rate.^{3,4} Similarly, a recent published data from the United Arab Emirates (UAE) concluded that COVID-19 in hospital mortality is higher in older people and those with comorbidities.⁵

The UAE announced its first cluster of COVID-19 cases in

late January 2020 when a group of patients from outside the country was confirmed as being infected.⁶ At the time of writing this paper, there were a total of 66,899,587 tests performed since the pandemic started, a total of 686,981 confirmed cases and 20886 were active cases, and a total of 1965 deaths. The recovery rate has been high, resulting in a case mortality rate of $<1\%$.⁷ The UAE government put enormous effort to contain and halt the spread of COVID-19. Some of the primary governmental efforts were closing schools and higher education institutions and starting distance learning, suspending prayers in all places of worship, closing shopping centers and entertainment destinations, suspending flights and enabling working from home. A large-scale National Disinfection Program during which a curfew was introduced. The program ensured sterilization of public spaces, as a preventive measure to curb the spread of COVID-19.⁸ In addition, the UAE government initiated educational campaign to public emphasizing on mask wearing, hand washing and social distancing to reduce the spread of infection and ensure health of safety of the community.⁸ The emergence of the COVID-19 pandemic has changed the delivery of medical care across the world. The UAE healthcare system including Dubai Health Authority responded to the pandemic by minimizing patient contact with healthcare professionals, limit or reschedule hospital visits and outpatient clinics, deferring non-urgent procedures, and adopt telephone and telemedicine consultations.⁹

In line with Dubai Health Authority guidelines, Geriatric services in the Primary health care centers (PHCC) had to alter the delivery of care by suspending all the geriatric clinics and adopting telephone communication with patients to support geriatric patients during an infectious pandemic and to minimize visits and risk of exposure.

Objective

The strong infectivity of COVID-19 pose a great challenge in clinical prevention and control of the outbreak. This study will help to understand and document the preventive steps implemented on geriatric services in the primary health care centers during COVID-19 pandemic.

Significance for public health

COVID-19 pandemic has resulted in drastic public health measures in most countries of the world. Researches on the impact of COVID19 on different health specialties including geriatric services will help tailoring public polices and health polices to be more prepared to deal with emergencies such as the one created by the COVID-19 pandemic.

Design and methods

Setting

This is a retrospective study carried on geriatric services utilization (Geriatric Clinic, Osteoporosis Clinic, Memory and Dementia Clinic) in primary health care centers in Dubai Health Authority in 2020.

Data source and study population

The Dubai Health Authority has an electronic health record called SALAMA system. Data from the SALAMA electronic health record was used to analyze outpatient encounters. The data was extracted from SALAMA system to elicit the following:

- The total number of outpatients visits in geriatric clinics, osteoporosis clinics and memory and dementia clinic in 2020.
- The total number of telephone encounter in geriatric clinics, osteoporosis clinics and memory and dementia clinic in 2020.
- The total number of DEXA done to patients in osteoporosis clinics in 2020.
- The total number of new referral to the geriatric services in 2020.
- The total number of patients received medicine at home through Dawa'ee service in 2020.

Study outcome measurements

The study endpoints were to analyze the trends, absolute number changes, and percentage changes of the geriatric services in PHCC in the first third of 2020 as well as during COVID-19 pandemic.

Results

By the end of March 2020, PHCC closed geriatric services clinics and the delivery of service changed from the usual face-to-face service to telephone consultation for all booked appointments, and then partially reopened the services in August 2020 with some restrictions on the population.

The PHCC overall in-person visits encounters declined by almost 7% from average number of 347 in person visit per month from Jan – Mar to 108 in person visit per month from Aug – Dec 2020. The number of monthly encounters were below the baseline level of activity, indicating an ongoing decrease in the overall number of patients attending to the geriatric services as shown in Figure 1.

Figure 2 shows that, the geriatric clinics encounters decreased by 76.9%, from average number of 143 in person visit per month from Jan – Mar to 33 in person visit per month from Aug – Dec 2020. The total number of telephone consultation in geriatric clinics in 2020 was 1479. With the phase of re-opening geriatric clinic in August 2020, the number of monthly telephone consultation showed a steady decline reaching 115 consultations in December (Figure 2).

The osteoporosis clinic encounter revealed a drop in the average number of in-person visit per month from 195 per month from Jan- Mar to 66 per month from Aug - Dec, with a 66.2% reduction. Furthermore, the total number of telephone consultation in osteoporosis clinics in 2020 was 1149. With the phase of re-opening osteoporosis clinic in August 2020, the number of monthly telephone consultation overall remained stable (Figure 3).

Memory and dementia clinic encounter remained unchanged with an average number of 9 in person visit per month in 2020. Moreover, the total number of telephone consultation in dementia and memory clinic in 2020 was 104 (Figure 4).

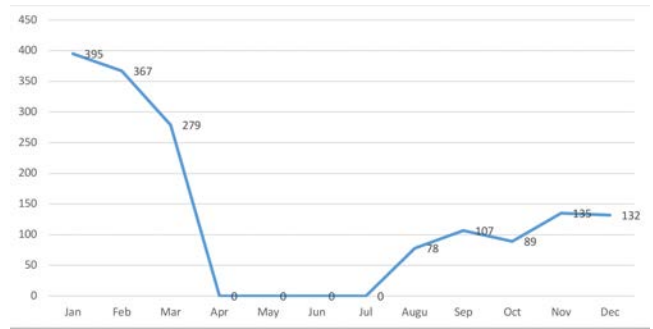


Figure 1. PHCC overall in person visits for all geriatric service in 2020.

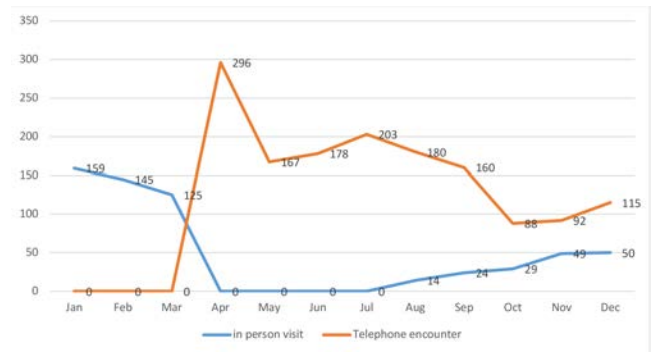


Figure 2. Total in person visit and telephone consultation utilization across geriatric clinics in 2020.

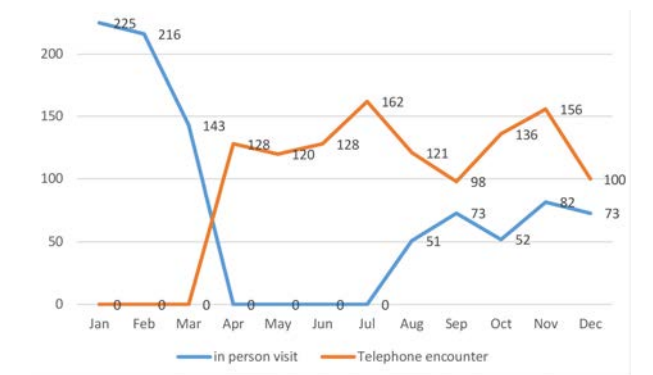


Figure 3. Total in person visit and telephone consultation utilization across osteoporosis clinics in 2020.

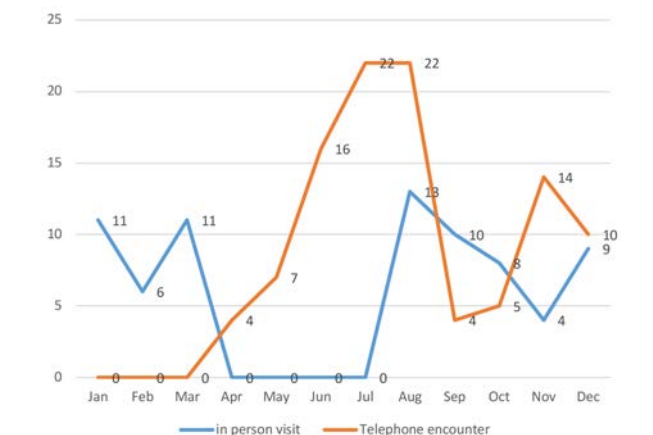


Figure 4. Total in person visit and telephone consultation utilization across memory and dementia clinic in 2020.

Figure 5 shows that, the average number of DEXA scan per month was 110 during the period from Jan- Mar, and this declined by 58.4%, reaching an average number of 46 DEXA scan per month during the period from Aug - Dec 2020.

Referral to the geriatric services is mainly done by the family physician in the PHC according to the criteria of referral to each specialized clinic. Of note, the average new monthly referral showed a reduction during COVID 19 pandemic, from 60 new referral per month from Jan – Mar to 20 new referrals per month from Aug to Dec 2020 as shown in Figure 6.

Dubai Health Authority had implemented Dawa'ee service in 2019, which provides home medication delivery service in Dubai. However, during the COVID 19 pandemic, the demand on the services increased and Dubai Health authority expanded the service to ensure the delivery of medicine to the whole UAE. Figure 7 demonstrates that, in 2020 Dawa'ee delivered 1123 home delivered prescriptions with an average of 112 per month. The utilization of home medication delivery reached the highest level in April with 175 prescriptions delivered.

Discussion

The primary health care in Dubai Health Authority provides outpatients specialized geriatric clinics such as geriatric medicine clinic, osteoporosis clinic and memory clinic. This study showed that COVID-19 pandemic had led to a reduction in most of the geriatric services including outpatient clinics, screening and referral. Similar changes were observed in other specialties following the restructuring of services due to COVID-19 pandemic.¹⁰⁻¹²

Telephone and video telemedicine appointments have been a crucial service delivery method to maintain the continuity of health care that has been disrupted in the COVID-19 pandemic. The use of telemedicine services increased globally, and the United Arab Emirates is not different.¹³⁻¹⁵ COVID-19 has demonstrated the value of telehealth in providing geriatric care during the pandemic.¹⁶ In April 2020, with the closure of all the geriatric services in PHC, telephone consultation was the method of communication to provide access to health care services and reduce the risk of disease transmission. The geriatric services were reopened in August 2020, with strict measures have been implemented to protect patients seeking medical advice. One of these measures is the relocation of geriatric clinic to clean PHCC. Clean PHCC is a new terminology introduced in Dubai primary health care during COVID-19 pandemic. Clean PHCC is COVID-19 free, no polymerase chain reaction (PCR) test is done and COVID-19 patient or contact is not seen in the clinic. The temperature of everyone coming into clinic is checked. This modification in practice aim to safely accommodate in-person visit.

The health impacts of COVID-19 are both direct, as a consequence of the infection itself, and indirect, due to interruption in routine and preventive health care services and in the management of chronic diseases.¹⁷ In this study, osteoporosis screening was almost completely arrested, due to the discontinuation of DEXA-scanning and closing of osteoporosis clinics from April to July 2020. Because of the prioritization of urgent services and delaying of elective care, the management of many chronic or long-term medical conditions, such as osteoporosis, has been challenging as resources are diverted from chronic diseases care to combat the pandemic.¹⁷

The memory and dementia clinic is an outpatient clinic where patient with mood, behavioral and memory disturbance referred. Our data highlighted that patient attended the clinic after the reopening with no reduction noted. The need for assessment of patient is conceivably explained by the result of the negative con-

sequence of quarantine and social distancing measures.

Researches have also shown that perceived social isolation is a risk factor for poor overall cognitive performance, faster cognitive decline, and increased depression.¹⁸⁻¹⁹ A recent study conducted in Kuwait concluded that, the cognitive functions in patients with dementia and mild cognitive impairment declined more rapidly during lockdown, in comparison to the pre-pandemic period.²⁰

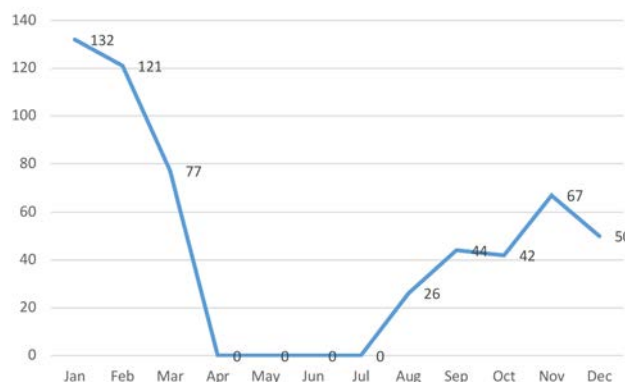


Figure 5. Number of DEXA done in 2020.

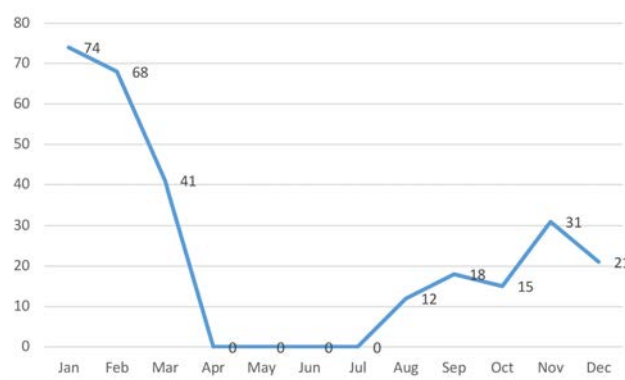


Figure 6. Number of new referral to geriatric services in 2020.

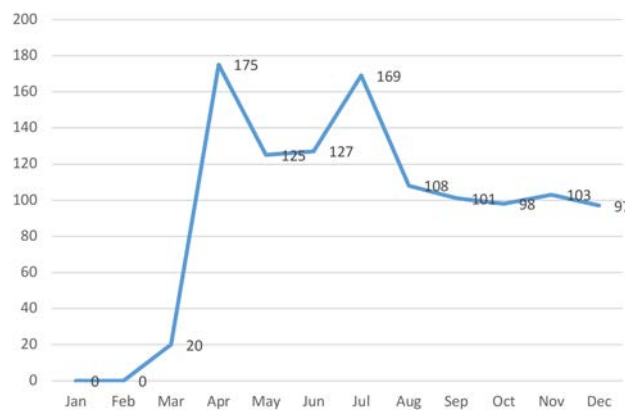


Figure 7. Home delivered prescription in 2020.

Our data showed that there is a reduction of new referral to the geriatric services, this could be explained that many patients have been fearful of exposure to COVID-19 and thus have been less likely to present to healthcare services and to family physician for screening and referral. The finding is consistent with the recently published results of impact of COVID-19 pandemic on the preventive services in Qatar. The study revealed that, screening services were suspended and therefore they found a reduction of number of screening and wellness appointments.²¹

Conclusions

In conclusion, the COVID-19 pandemic had led to a reduction in most of the geriatric services including outpatient clinics, screening and referral. The preventive steps implemented on geriatric services in the primary health care centers during COVID-19 pandemic helped to provide care to the patient regardless of the closure of the geriatric services clinics. Telephone consultation provided a foundation for delivery of the service. This study reflected the potential for telehealth services to bring benefits and convenience to the geriatric population, even after the end of the pandemic.

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References

- Zhu N, Zhang D, Wang W, et al. A novel coronavirus from patients with pneumonia in China, 2019. *N Engl J Med* 2020;382:727-73.
- Dhama K, Patel SK, Kumar R, et al. Geriatric population during the COVID-19 pandemic: Problems, considerations, exigencies, and beyond. *Front Public Health* 2020;8:574198.
- Crimmins EM. Age-related vulnerability to coronavirus disease 2019 (Covid-19): biological, contextual, and policy-related factors. *Publ Pol Aging Rep* 2020;30:142-6.
- Boccardi V, Ruggiero C, Mecocci P. COVID-19: A geriatric emergency. *Geriatrics (Basel)* 2020;5:24.
- Deeb A, Khawaja K, Sakrani N, et al. Impact of ethnicity and underlying comorbidity on COVID-19 in-hospital mortality: An observational study in Abu Dhabi, UAE. *Biomed Res Int* 2021;2021:6695707.
- The national news [Internet]. Coronavirus: UAE records first case. Accessed: 9 August 2021. Available from: <https://www.thenationalnews.com/uae/health/coronavirus-uae-records-first-case-1.971253>
- United Arab Emirates National Emergency Crisis and Disaster Management Authority. UAE Coronavirus (Covid-19) updates. Available from: <https://covid19.ncema.gov.ae/en> (accessed 9 August 2021).
- United Arab Emirates Government [Internet]. Handling the COVID-19 outbreak. Accessed: 9 August 2021. Available from: <https://u.ae/en/information-and-services/justice-safety-and-the-law/handling-the-covid-19-outbreak>
- Dubai Health Authority [Internet]. Novel coronavirus. Accessed: 9 August 2021. Available from: www.dha.gov.ae/en/Covid19/Pages/Coronavirus.aspx
- Fersia O, Bryant S, Nicholson R, et al. The impact of the COVID-19 pandemic on cardiology services. *Open Heart* 2020;7:e001359.
- Xu Z, Fan J, Ding J, et al. The Impact of COVID-19 on Primary care general practice consultations in a teaching hospital in Shanghai, China. *Front Med (Lausanne)* 2021;8:642496.
- Sadiq Y, Mehrotra A, Huskamp H, et al. Trends in outpatient care delivery and telemedicine during the COVID-19 pandemic in the US. *JAMA Intern Med* 2021;181:388-91.
- Ohannessian R, Duong TA, Odone A. Global telemedicine implementation and integration within health systems to fight the COVID-19 pandemic: A call to action. *JMIR Public Health Surveill* 2020;6:e18810.
- Smith AC, Thomas E, Snoswell CL, et al. Telehealth for global emergencies: Implications for coronavirus disease 2019 (COVID-19) *J Telemed Telecare* 2020;26:309-13.
- Kichloo A, Albosta M, Dettloff K, et al. Telemedicine, the current COVID-19 pandemic and the future: a narrative review and perspectives moving forward in the USA. *Fam Med Community Health* 2020;8:e000530.
- Doraiswamy S, Jithesh A, Mamtani R, et al. Telehealth use in geriatrics care during the COVID-19 pandemic-A scoping review and evidence synthesis. *Int J Environ Res Public Health* 2021;18:1755.
- Hampson G, Stone M, Lindsay JR, et al. Diagnosis and management of osteoporosis during COVID-19: Systematic review and practical guidance. *Calcif Tissue Int* 2021;109:351-62.
18. Tilvis RS, Kähönen-Väre MH, Jolkkonen J, et al. Predictors of cognitive decline and mortality of aged people over a 10-year period. *J Gerontol A Biol Sci Med Sci* 2004;59:M268-74.
- Zarrabian S, Hassani-Abharian P. COVID-19 pandemic and

- the importance of cognitive rehabilitation. *Basic Clin Neurosci* 2020;11:129-32.
20. Ismail II, Kamel WA, Al-Hashel JY. Association of COVID-19 pandemic and rate of cognitive decline in patients with dementia and mild cognitive impairment: A cross-sectional study. *Gerontol Geriatr Med* 2021;7:23337214211005223.
21. Al-Kuwari MG, Abdulmalik MA, Al-Mudahka HR, et al. The impact of COVID-19 pandemic on the preventive services in Qatar. *J Public Health Res* 2021;10:1910.